

Aug. 5, 1969

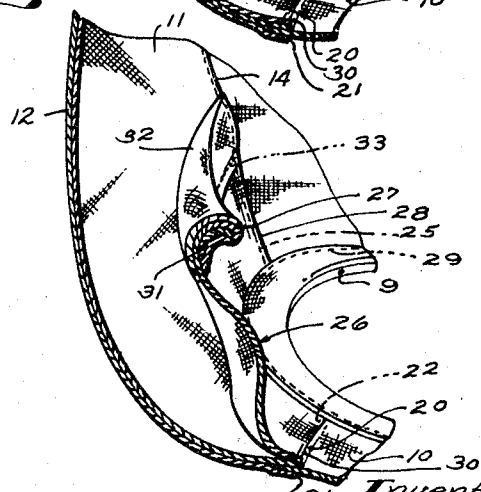
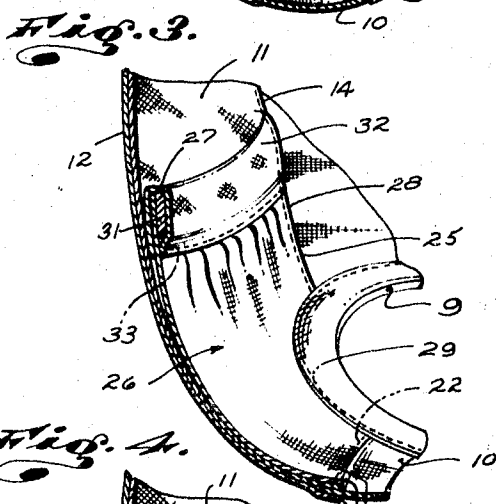
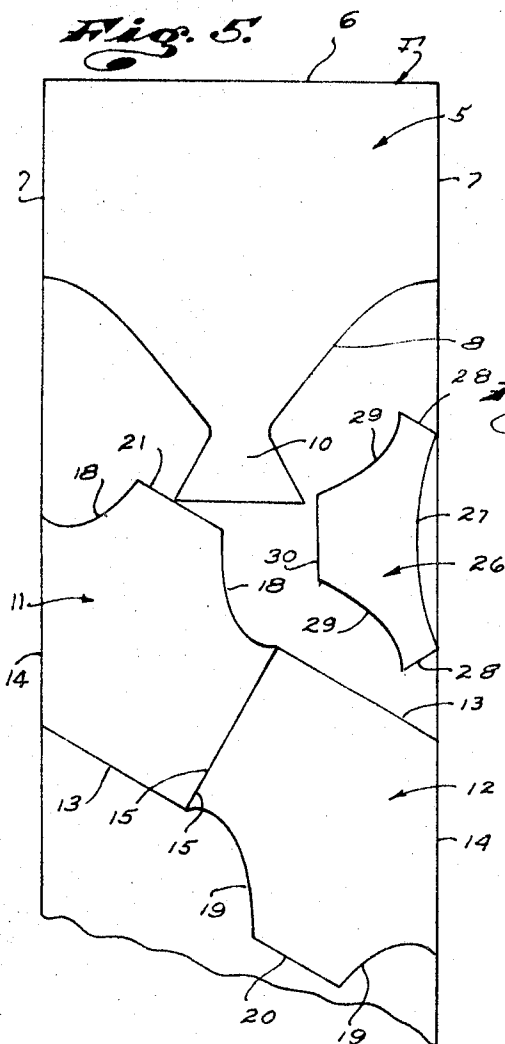
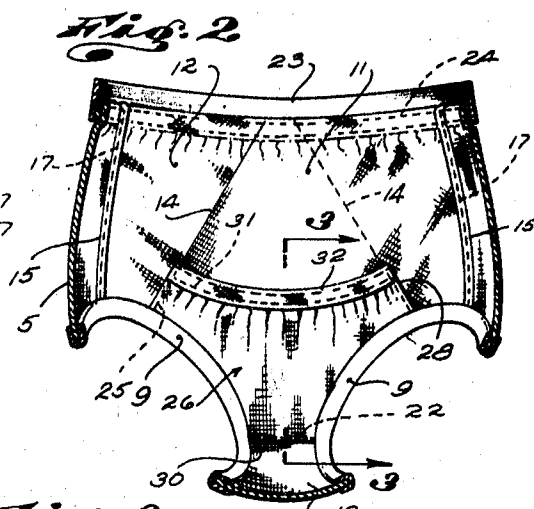
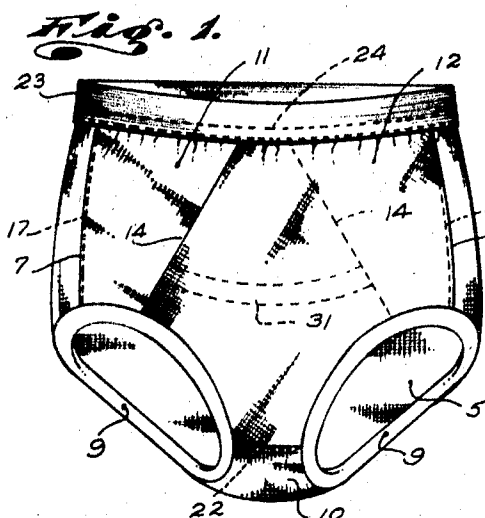
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3,459,181

SHORTS CONSTRUCTION

Filed May 10, 1967

2 Sheets-Sheet 1



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SHORTS CONSTRUCTION

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2 Sheets-Sheet 2

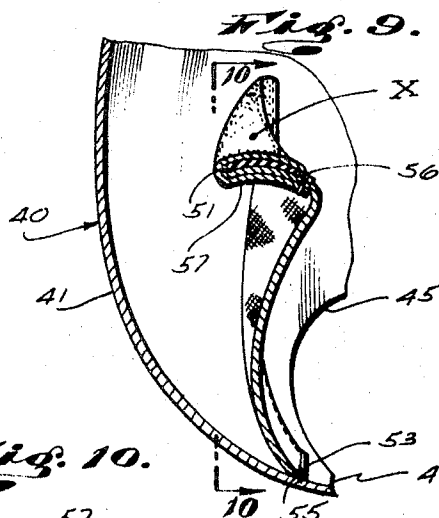
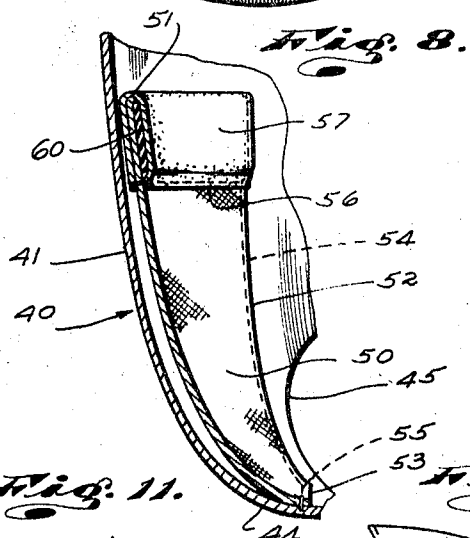
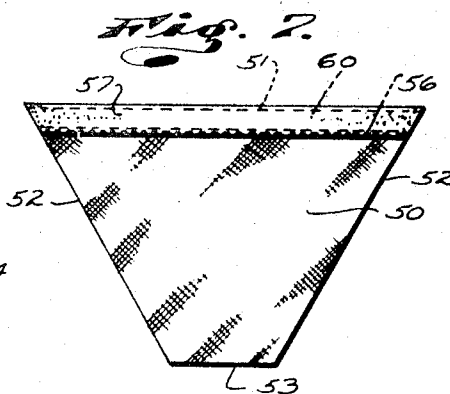
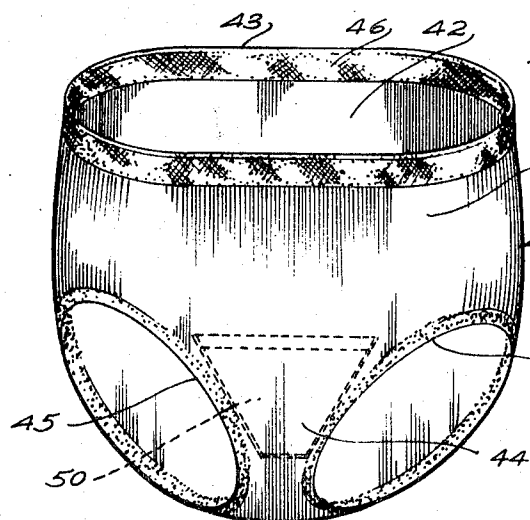


Fig. 11.

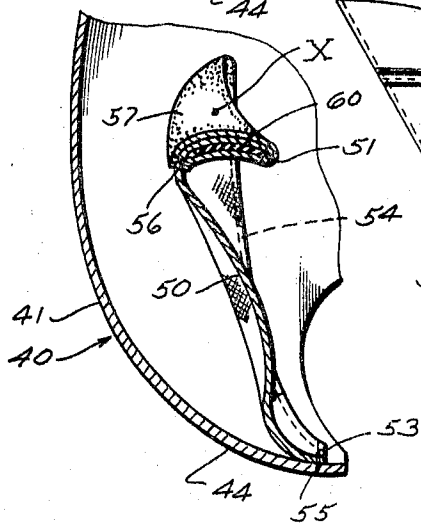
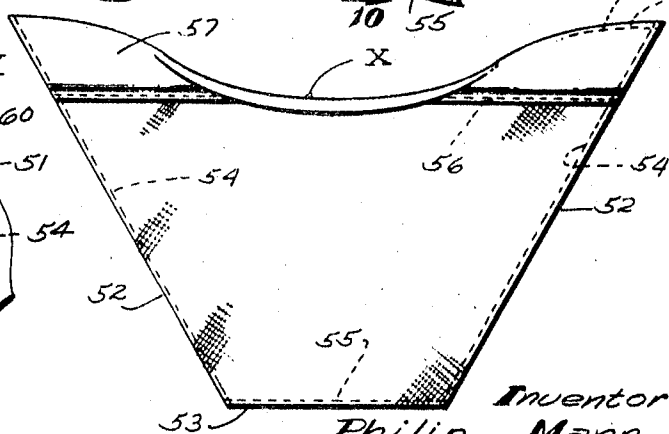


Fig. 10.



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3,459,181

## SHORTS CONSTRUCTION

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Continuation-in-part of application Ser. No. 555,888,  
June 7, 1966. This application May 10, 1967, Ser.  
No. 637,447

Int. Cl. A61f 5/40; A41b 9/02

U.S. Cl. 128-159

10 Claims

### ABSTRACT OF THE DISCLOSURE

An improved brief type shorts for men adapted to be engaged about the lower front, rear and side portions of the wearer's body in close proximity thereto and having a crotch portion extending between the wearer's legs, said crotch portion having a forwardly and upwardly extending front portion to occur adjacent and overlie the wearer's organs, and an organ receiving pouch forming insert of knitted material arranged within the shorts adjacent the front portion of the crotch portion of said shorts.

This application is a continuation-in-part of the application of Philip Mann, Ser. No. 555,888, filed June 7, 1966, entitled "Undergarment," and now abandoned.

An object of my invention is to provide a novel garment and is more particularly concerned with shorts for men of that type or class commonly referred to as brief type shorts and which are worn as undergarments, swim trunks, or for other like purposes.

In the art of brief type shorts for men, such shorts are normally established of stretchable, knitted material and are frequently provided with elastic ribbons or tapes about the waist and leg openings. Such shorts, for whatever purpose they are employed, have become widely used and are considered most comfortable by those who use them, since they are form fitting, are free of excess loose and cumbersome fabric and tend to provide limited support for and maintenance of male genitalia (herein referred to as "organs") of the wearer in a comfortable position. Unlike boxer type shorts which have loose open leg portions into which the organs are free to depend and which have non-elastic crotch portions, replete with stitched seams, on and over which the organs frequently become caught and hung, the knitted brief type shorts effectively hold up and support the organs, centrally.

While the ordinary brief type shorts are far superior to the boxer type shorts, in the above respect, they are still wanting in that they do not control forward and rearward shifting of the organs.

Frequently, when a man wearing knitted brief type shorts is walking or when he moves about from squatting or sitting positions to standing or upright positions, his organs shift downwardly and rearwardly between his legs or shift forwardly and laterally to the left or right adjacent the groin, any of which positions are or can become discomforting and require the wearer to manually or otherwise adjust himself. Frequently, such adjustment is impossible or inconvenient and cannot be effected for a considerable period of time.

It has long been recognized that if organs are held up and are comfortably supported in a pouch-like structure and are thus held and supported against lateral displacement, the man is more comfortable and is able to work and move about freely without experiencing any discomfort and/or irritation. For the above reasons, it is not uncommon that men, in addition to wearing shorts, also wear athletic supporters.

To my knowledge, a single attempt to improve knitted brief type undershorts for men has been made in a manner to enhance their supporting effect, by holding the organs up and forward in the shorts. This attempt is disclosed in U.S. Patent No. 2,621,654 issued to D. I. Wallace, Sr., Dec. 16, 1952, and entitled "Undergarment." In the above patented structure, a pouch forming section established of a vertically stretchable knitted fabric and having a straight, transversely extending upper edge is stitched into the lower forward portion of the knitted brief type shorts. The object of this structure is to provide an upwardly opening, pocket-like pouch into which the wearer's organs can be deposited by manually lifting and drawing the organs forward and lowering them into the pocket or pouch. While the structure appears to have merit, it has not proven to be satisfactory, since if the knitted fabric is strong enough to maintain the desired pouch configuration, the upper edge of the pouch defined by the section tends to cut into the posterior portion of the organs and impairs circulation. If the material is sufficiently soft and flexible to overcome the above-noted objection, the pouch loses its configuration and the organs readily become displaced, in total or in part, thereby creating greater discomfort than the structure is intended to overcome.

Still further, since the fabric is vertically stretchable and is laterally inflexible, the pouch forming section is tensioned between its sides and in many instances pulls the portions of the shorts to which its sides are connected, as for instance the inner edges of the leg openings, away from the wearer's body or legs and results in shifting and discomforting displacement of the shorts on the wearer.

Further, if the noted shorts construction is shifted about and adjusted so that the pouch is misaligned, there is a tendency for the pouch and/or the portions of the shorts with which the pouch forming section is connected, to gather, pucker, fold, roll and/or bunch up in such a way as to be discomforting.

It has been found that, due to the straight, horizontal nature of the upper edge of the above-noted pouch construction provided by the prior art, little or no vertical adjustment is provided and lateral shifting of the organs along or across the upper edge is not infrequent and results in considerable discomfort.

An object of my invention is to provide shorts constructions of the general character referred to having improved, highly effective, dependable and comfortable pouch forming means for receiving and supporting the organs of the wearer.

An object and feature of my invention is to provide a pouch forming insert for engagement in and with brief type shorts of the general character referred to having an upwardly opening arcuate or curved upper edge or an elastic binder which functions to define such an edge and which affords considerable vertical adjustment, to compensate for differences in the placement of the organs of different wearers and which effectively centers and maintains the organs deposited in the pouch, centrally of the shorts and the wearer.

Another object and feature of my invention is to provide a structure of the character referred to wherein the upper edge portion of the pouch forming section is laterally extensible so as to enhance the above-noted adjustability of the structure and so that the volume of the pouch can vary to effectively accommodate such organs of varying size or volume, without constriction thereof and without distortion of the overall construction.

Yet another object of the present invention is to provide a structure of the character referred to wherein the upper edge of the pouch forming section is provided with an

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elongate elastic ribbon of considerable width or lateral extent and which is such that it will readily turn or twist to establish flat, wide bearing engagement with adjacent organs and will not present an uncomfortable or cutting edge.

A further object of the invention is to provide an insert of the character referred to wherein the elastic ribbon is such that the supporting edge defined thereby is resilient and yielding to such an extent that it will not, at any time, bind the wearer and will readily conform to the adjacent portions of the wearer's organs so that they will not tend to become displaced.

The foregoing and other objects and features of my invention will be fully understood from the following detailed description of typical preferred forms and applications of my invention, throughout which description reference is made to the accompanying drawings, in which:

FIG. 1 is a front view of a shorts construction embodying the present invention;

FIG. 2 is a vertical, sectional view of the construction shown in FIG. 1, looking at the inside of the front of the garment;

FIG. 3 is a sectional view taken substantially as indicated by line 3—3 on FIG. 2;

FIG. 4 is a view similar to FIG. 3 showing the structure in a different position;

FIG. 5 is a view of a length of knitted fabric having the patterns of the garment sections going to make up the shorts construction marked thereon in such a way as to be cut without unduly wasting material;

FIG. 6 is a view similar to FIG. 1 showing another form of shorts construction with my invention incorporated therein;

FIG. 7 is a view of the insert employed in the shorts shown in FIG. 6;

FIG. 8 is a sectional view of the pouch shown in FIG. 6;

FIG. 9 is a view similar to FIG. 8 showing the construction in another position;

FIG. 10 is a view taken as indicated by line 10—10 on FIG. 9; and

FIG. 11 is a view similar to FIG. 9 showing the construction in another position.

Referring to the drawings, 5 indicates a one-piece back section having a straight top edge 6, straight upper side edge portions 7 and downwardly and laterally inwardly cut lower side edge portions at 8 to define portions of the edges of leg openings 9 and a crotch extension 10. The garment also includes similar one-piece front sections 11 and 12, having straight top edges 13, inclined inner side edges 14 and straight outer side edges 15, which side edges are stitched to the upper side portions of the rear section as indicated at 17. The lower portions of the front sections 11 and 12 are cut as at 18 and 19 to provide or define the remaining portions of the edges of the leg openings 9 and present straight lower edges 20 and 21 on the respective sections 11 and 12, which edges are stitched, as at 22, to the free end edge of the crotch extension 10 of the rear section 5. An elastic waistband 23 is stitched, as at 24, to the upper edges of the sections 5, 11 and 12.

The section 5 is or can be cut from a length of knitted fabric F (see FIG. 5 of the drawings) on the straight of the fabric and the sections 11 and 12 are cut therefrom on the bias so that they impart transverse elasticity to the garment.

In assembling the two front sections 11 and 12, the inner portion of the latter is superimposed upon the inner portion of the former so that they overlap. These sections are joined together by stitching 25 extending from the lower side edge portions 18 and 19 and partially along the inner side edges 14 and 15 of the said sections. As the sections 11 and 12 have very little stretch vertically, they provide a self-closing fly where they overlap.

A pouch forming section 26 is cut from and on the straight of the fabric F so it is vertically elastic. The section 26 has an upwardly opening concaved or crescent

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shaped upper forward edge 27, straight downwardly and slightly divergently extending side edge portions 28, curved downwardly converging lower side edge portions 29 and a straight bottom rear edge 30.

The upper forward edge portion of the section is slightly gathered laterally and is stitched to a longitudinally extending, elastic ribbon 31. The ribbon 31 and the adjacent edge of the section 26 can be covered or bound by a soft, flexible knitted tape 32, as illustrated, or the upper edge of the section can be hemmed to enclose the ribbon if such is desired or required.

The tape and ribbon are stitched to the section together by common stitching 33.

With the above structure, it will be apparent that the upper edge portion of the pouch section is laterally extensible or elastic as well as being vertically elastic and is built up by the bulk of the ribbon 31 and tape 32 so that a supporting edge of sufficient bulk and cross-section, so as not to cut into and create discomfort to the wearer, is established.

The section 26 is stitched along its edges 28 and 29 to the edges 14 of the sections 11 and 12, as at 25, and its bottom edge 30 is stitched to the inside of the lower portion of the underlying front section 11 of the shorts to provide an upwardly opening pouch for receiving and positively supporting the organs.

The pouch thus established extends forwardly from the central laterally extending seam in the crotch of the shorts, established by the union of the edge 20 of the front section with the extension 10 of the rear section and terminates and opens upwardly in the lower forward portion of the shorts along a line extending transverse the front of the shorts and on a mean horizontal plane which substantially intersects the base or point of jointure of the organs with the body of the wearer, when the wearer is in a standing or upright position.

The lateral elasticity of the upper forward portion is such that it permits the pouch to be opened by rearward shifting of said upper edge of section 26, without drawing the adjacent, laterally spaced portions of the shorts to which the sides of the section 26 are stitched inwardly and in such a manner as to pull and draw the adjacent portions of the leg openings away from the wearer's legs.

The vertical elasticity of the section 26 is such that the section will expand sufficiently forwardly and rearwardly to comfortably accommodate the bulk of the organs.

The curvature of the upper edge 27 of the section 26 serves to center, cradle and maintain the organs in proper center position in the pouch and relative to the shorts and effectively prevents the organs from becoming laterally displaced in a manner which may be discomforting.

The elastic ribbon 31 is such that it affords sufficient resistance to hold the posterior portion of the organs forwardly and up, but not so much resistance as would tend to pull or cut off circulation thereof.

The upper edge portion of the section 26 is gathered to an extent that it will permit the elastic ribbon to stretch to that extent necessary for the pouch to be opened sufficiently and such that it will limit and stop opening of the pouch to such an extent that the whole or any part of the organs arranged therein may become displaced and/or constricted.

When the elastic ribbon is stretched to open the pouch, the gathers in the upper portion of the section are substantially removed, presenting a substantially smooth, comfortable and wrinkle-free pouch structure.

It is to be understood that, in practice, the pouch forming section can be established of material which is elastic and stretchable in two or more directions in which case the upper edge portion of the section, where it is related to and connected with the elastic ribbon, need not be gathered as illustrated and described above. Such a modified construction falls within the scope of and spirit of this invention.

The pouch thus established is such that when the wearer sits down, squats, or otherwise changes position, the or-

gans are held up and forward and are prevented from shifting or dropping downwardly between the wearer's legs and within the clothing of the wearer in such a manner as to become discomforting and such that when the wearer stands erect again, or changes his position, in any manner whatsoever, the organs are properly arranged so that he need not manually or otherwise adjust himself.

In the form of the invention illustrated in FIGS. 6 through 11 of the drawings, a shorts construction 40 in the nature of swimming trunks or shorts is employed. This form of shorts is a unitary or one-piece knitted structure and is free of the several fabric sections, seams and the like going to make up the shorts disclosed in the first form of the invention.

The shorts 40 have front and rear portions 40 and 41, an open top 43, a lower central crotch portion 44 extending between the lower parts of the front and rear portions and cooperating therewith to define a pair of laterally spaced, downwardly and laterally outwardly disposed leg openings 45.

The upper open end or top of the shorts is suitably hemmed, as at 46 to receive a suitable drawstring, or the like (not shown), in accordance with common practice.

The shorts 40, in accordance with the present invention, further includes a pouch forming insert 50 arranged in the upper forward portion of the crotch portion 44.

The insert 50 is a simple, flat, trapezoidal part established of stretchable knit fabric. The fabric is preferably four-way stretch fabric. The insert 50 is substantially vertically disposed and is arranged adjacent the inner surface of the forward portion of the crotch portion 44 of the shorts 40.

The insert 50 has a substantially straight, horizontal, transversely extending upper edge 51, laterally spaced side edges 52 and a transversely extending bottom edge 53. The side edges 52 can be straight or curved as circumstances require and can be parallel or, as illustrated, downwardly convergent. The insert is shaped so that it can be conveniently arranged in the forward portion of the crotch portion 44 of the shorts with the upper edge 51 thereof extending transverse said crotch portion of the shorts at the desired elevation, within the shorts.

In this form of the invention, the side edges 52 of the insert 50 are not shaped to conform with adjacent edge portions of the leg openings 45 of the shorts and, as will be apparent from a study of the drawings, are in fact spaced from and clear of said leg openings.

The insert 50 is fixed in and with the shorts 40 by lines of stitching 54 along the side edges 52, and, if necessary, by a row of stitching 55 along the bottom edge 53 of the insert.

The insert 50 further includes an elongate, longitudinally stretchable, elastic support ribbon or tape 60 fixed to and extending longitudinally along the upper edge 51 of the insert to normally occur in a vertical plane. In practice, the tape 60 can be arranged with its lower edge adjacent the upper edge 51 of the insert and suitably stitched thereto or can, as illustrated, be arranged adjacent the upper edge portion of the insert, with its upper edge even with the upper edge 51 of the insert and fixed to the insert by suitable stitching 56. Still further, the tape 60 and the adjacent upper edge portion of the insert can be covered and enclosed by a suitable soft, flexible binding tape 57.

The tape 60, while initially or normally straight and such that it defines a narrow straight upper edge, is such that its central portion is easily and readily bent over to provide a central, wide, longitudinally concaved, laterally extending support surface X, as clearly illustrated in FIGS. 9, 10 and 11 of the drawings.

In FIGS. 9 and 10 of the drawings, the central portion of the tape 60, with its adjacent upper edge portion of the insert, is bent over forwardly and downwardly while in FIG. 11 of the drawings, the tape and adjacent portion of the insert is bent over rearwardly and down-

wardly. It will be apparent from the above that the tape 60 can be bent over and/or turned either forwardly or rearwardly to establish the broad curved supporting surface X with equal success.

While I have shown the central portion of the tape 60 turned ninety degrees from a vertical plane to a horizontal plane, in practice, it may be turned a greater or lesser amount and will normally lie in a plane substantially parallel with the plane of the surface of the wearer's body bearing upon it.

It is to be noted that in this second form of the invention, the tape 60, while normally straight, is such that when the structure is in use, it does not present the straight, thin top edge to engage and support the wearer's organs, but rather, presents a wide, longitudinally concaved, laterally extending supporting surface to engage and support the portion of the wearer's organs in contact therewith.

It is to be noted that the terminal ends of the tape 60 are fixed to the shorts by the stitching 54 and are prevented from bending, twisting or turning as a result of the connection with the shorts. Since the opposite ends of the tape 60 are fixed to the shorts so that they cannot turn and remain in a vertical plane, and since the central portion thereof is adapted to and readily turns, as illustrated in the drawings, it will be apparent that the portions of the tape intermediate the vertical ends and the horizontally turned center define downwardly and inwardly inclined surfaces and/or edges which cooperate to maintain the organs of the wearer positioned centrally of the construction.

It will be noted that should the organs of the wearer move laterally towards one end of the tape, the inclined condition of that portion of the tape extending towards said one end of the tape becomes more acute and the inclined condition of that portion of the tape extending to the other end thereof becomes less acute, with the result that the tape serves to automatically move the organs back to a central position relative to the tape.

In all other respects the insert 50 in the second form of the invention functions the same as the insert 27 in the first form of the invention.

It is to be noted that in the instant constructions, the laterally extending arcuate or swagged elastic ribbons, anchored at their opposite ends, establish primary supporting means and that the main body portions of the pouch forming sections, the upper portions of which are supported by the elastic ribbons, serve, primarily, the function of retaining the organs engaged over and supported by the elastic ribbon.

In essence, the instant invention consists of the provision of a unitary fabric insert with top and side edges and an elastic supporting ribbon along its upper edge, which insert is adapted to be engaged in the lower front portion of a pair of brief type shorts to extend downwardly and rearwardly into the forward crotch portion of said shorts and stitched to the forward and crotch portions of said shorts along its two downwardly and rearwardly extending sides and to cooperate with said shorts to establish an upwardly opening organ receiving pouch.

It is to be understood that, in practice, where circumstances require, or where desired, a pouch forming insert such as I provide can be advantageously arranged in and incorporated with the full or partial knit supporter liners commonly provided in swim trunks and other such garments without departing from the spirit of this invention.

Still further, application of my pouch forming insert is not restricted to shorts alone, but can be employed in combination with long underwear and other tight, form fitting pants, or the like.

It will be apparent that the insert can be of any shape that will satisfactorily cooperate with its related shorts construction and that the shape of those particular in-

serts shown in the drawings are only illustrative of two shapes of inserts that can be employed.

Having described only typical preferred forms and applications of my invention, I do not wish to be limited or restricted to the specific details herein set forth, but wish to reserve to myself any modifications and/or variations that may appear to those skilled in the art.

Having described my invention, I claim:

1. An improved brief type shorts for men adapted to be engaged about the lower front, rear and side portions of the wearer's body in close proximity thereto and having a crotch portion extending between the wearer's legs, said crotch portion having a forwardly and upwardly extending substantially vertical, front portion located adjacent and overlying the front of the wearer's organs and an organ receiving pouch forming insert of knitted material arranged within the shorts adjacent the front portion of the crotch portion of said shorts, said insert having a lower rear end joined to the crotch portion located below the organs of the wearer, laterally spaced sides fixed to the crotch portion of the shorts in lateral spaced relationship to extend forwardly and upwardly at opposite sides of the wearer's organs, an upper edge extending transverse the upper forward portion of said crotch portion and an elongate, flat, wide, elastic ribbon tape fixed to and extending longitudinally of said upper edge with its ends fixed to the shorts in vertical plane, the flat central portion of said tape normally extending in a substantially vertical plane and adapted to be turned relative to its longitudinal axis and between its fixed vertical ends to bend across its lateral extent to define a substantially upwardly disposed, longitudinally concaved, transversely extending support surface convex in cross-section to engage and support a portion of the wearer's organs.

2. A structure as set forth in claim 1 wherein the upper edge portion of the pouch forming section, adjacent the tape, is normally gathered.

3. A structure as set forth in claim 1 wherein the knitted material of the pouch forming section is vertically elastic and laterally non-elastic, the upper edge portion of the pouch forming section being normally gathered where it is joined to the ribbon tape whereby the ribbon and the upper portion of the section can be extended laterally to open the pouch established thereby.

4. A structure as set forth in claim 1 wherein the ends of the tape on the pouch forming section terminate above the base of the organs of the wearer and the central, laterally extending, concaved support surface thereof is located adjacent the rear base portion of said organs, whereby the organs of the wearer are engaged over the support surface and arranged within the pouch and are cradled and held centrally and against lateral displacement by said surface.

5. A structure as set forth in claim 1 wherein the ends of the tape on the pouch forming section terminate above the base of the organs of the wearer and the central, laterally extending, concaved support surface portion thereof is located adjacent the base portion of said organs, whereby the organs of the wearer are engaged over the support surface and are arranged within the pouch and are cradled and held centrally and against lateral displacement by said support surface, the upper edge portion of the pouch forming section, adjacent the tape, being normally gathered.

6. A structure as set forth in claim 1 wherein the knitted material of the pouch forming section is vertically elastic and laterally non-elastic, the upper edge portion of the pouch forming section being normally gathered where it is joined to the ribbon tape whereby the upper portion of the section can be extended laterally to open the

pouch established thereby, the ends of the tape terminating above the base of the organs of the wearer and the support surface defined by the turned central portion thereof is located adjacent the base of said organs, whereby the organs of the wearer are engaged over the support surface and arranged within the pouch and are cradled and held centrally and against lateral displacement by the support surface.

7. A structure as set forth in claim 1 wherein the upper edge portion of the pouch forming section is normally gathered, the upper edge portion of the pouch forming section and the ribbon tape being covered by a soft, flexible knitted tape.

8. A structure as set forth in claim 1 wherein the upper edge of the pouch forming section is normally concaved and said ribbon tape fixed thereto is normally concaved, the ends of the ribbon tape terminate above the base of the organs of the wearer and the central portion thereof is located adjacent the base of said organs, whereby the organs of the wearer are engaged over the supporting surface defined by the ribbon tape and arranged within the pouch and are cradled thereby and held centrally and against lateral displacement, the upper edge portion of the pouch forming section and the ribbon being covered by a soft, flexible knitted tape.

9. A structure as set forth in claim 1 wherein the upper edge of the pouch forming section is normally concaved and said ribbon tape fixed thereto is normally concaved, the ends of the ribbon tape terminate above the base of the organs of the wearer and the central portion thereof is located adjacent the base of said organs, whereby the organs of the wearer are engaged over the supporting surface defined by the ribbon tape and arranged within the pouch and are cradled thereby and held centrally and against lateral displacement, the upper edge portion of the pouch forming section being normally gathered, the upper edge portion of the pouch forming section and the ribbon being covered by a soft, flexible, knitted tape.

10. A structure as set forth in claim 1 wherein the upper edge of the pouch forming section is normally concaved and said ribbon tape fixed thereto is normally concaved, the knitted material of the pouch forming section is vertically elastic and laterally non-elastic, the upper edge portion of the pouch forming section being normally gathered where it is joined to the ribbon tape whereby the upper portion of the section can be extended laterally to open the pouch established thereby, the ends of the ribbon tape terminating above the base of the organs of the wearer and the turned central portion thereof is located adjacent the base of said organs, whereby the organs of the wearer are engaged over the supporting surface, are arranged within the pouch and are cradled and held centrally and against lateral displacement by said surface, the upper edge portion of the pouch forming section and the ribbon tape being covered by a soft, flexible, knitted tape.

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